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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,099	09/27/2001	Akihito Shizuno	212209US0	8185
22850	7590	04/20/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			CHEVALIER, ALICIA ANN	
			ART UNIT	PAPER NUMBER

1772

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/926,099	Applicant(s) SHIZUNO ET AL.	
	Examiner Alicia Chevalier	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/9/03</u> . | 6) <input type="checkbox"/> Other: _____ |

RESPONSE TO AMENDMENT

Request for Continued Examination

1. The Request for Continued Examination (RCE) under 37 CFR 1.53 (d) filed on February 3, 2004 is acceptable and a RCE has been established. An action on the RCE follows.
2. Claims 1-11 are pending in the application, claims 6-8 are withdrawn from consideration due to Applicant's election, in paper #10 filed March 6, 2003 in response to the restriction in paper #8 mailed February 6, 2003.
3. Amendments to claims, filed on December 9, 2003, have been entered in the above-identified application.

WITHDRAWN REJECTIONS

4. The 35 U.S.C. §102 rejection of claims 1, 2 and 11 over Schoots (US Patent No. 4,704,113), made of record in paper #14, mailed October 3, 2003, pages 3-4, paragraph #9 has been withdrawn due to Applicant's amendment in the response filed on December 9, 2003.
5. The 35 U.S.C. §103 rejection of claim 3 over Schoots in view of Takeuchi et al. (US Patent No. 5,958,555), made of record in paper #14, pages 4-5, paragraph #10 has been withdrawn due to Applicant's amendment in the response filed on December 9, 2003.
6. The 35 U.S.C. §103 rejection of claims 4, 9 and 10 as over Schoots in view of Shizuno et al. (US Patent No. 5,525,397), made of record in paper #14, pages 5-6, paragraph #11 has been withdrawn due to Applicant's amendment in the response filed on December 9, 2003.

7. The 35 U.S.C. §103 rejection of claim 4 over Schoots in view of Murase et al. (US Patent No. 5,718,972), made of record in paper #14, pages 6-7, paragraph #12 has been withdrawn due to Applicant's amendment in the response filed on December 9, 2003.

NEW REJECTIONS

8. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

Claim Rejections - 35 USC § 103

9. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotton et al. (U.S. Patent No. 5,223,319) in view of Horrocks (Handbook of Technical Textiles).

Cotton discloses a nonwoven wipe (*col. 1, line 6*).

Regarding Applicant's claims 1 and 11, Cotton discloses a bulky sheet (*non-woven wiper, col. 3, lines 25-26*) comprising a fiber web (*nonwoven web of fibers, col. 3, line 27*). The bulky sheet having a number of projections and depressions (*raised surface areas, col. 3, line 29 and figure 1*) comprising the fiber web. The projections have a corresponding depression on an opposite side of the bulky sheet and have a distance between projections in a width direction and a longitudinal direction (*figure 1*). The projections and depression retain shape by themselves, since Cotton does not disclose anything aiding the projections and depressions to help retain their shape.

Cotton further discloses that the bulky sheet has a distribution of the constituting fibers in the projections toward the depressions being at a very low level, since the reference discloses

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that the top of the projection, which is the bottom of the depression, comprises an aperture (*col. 3, line 29*). The aperture constitutes a fiber distribution of zero, which is deemed to be a very low level. Furthermore, the limitation “caused by migrating of said fibers” is a method limitation (*see Applicant’s specification page 6, lines 1-5*) and the method of forming the product is not germane to the issue of patentability of the product itself. MPEP 2113. Furthermore, there does not appear to be an unobvious difference between the prior art structure and the structure resulting from the claimed method, because Cotton discloses a very low level distribution of the constituting fibers in the projections, i.e. the aperture.

The limitation “said projections and said depressions being formed both by rearrangement of the constituting fibers of said entangled fiber aggregate by water needling of said entangled fiber aggregate and by the multiple bending manner of said entangle fiber aggregate along the thickness direction thereof” is a method limitation and does not determine the patentability of the product, unless the process produces unexpected results. The method of forming the product is not germane to the issue of patentability of the product itself, unless Applicant presents evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. MPEP 2113. Furthermore, there does not appear to be an unobvious difference between the prior art structure and the structure resulting from the claimed method because Cotton discloses the fiber web comprises projections and depressions (*figure 1*).

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The following figure from Cotton accompanies the discussion of claims 1 and 11.

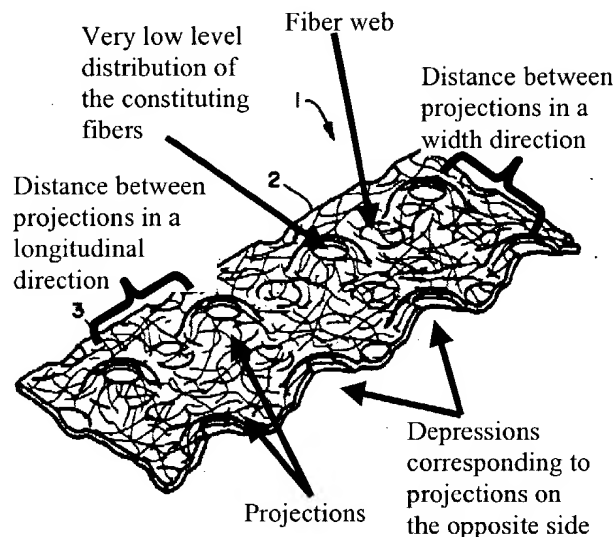


FIG. 1

Cotton fails to disclose an entangled fiber aggregate formed by water needling of a fiber web.

Horrocks discloses entangled fiber aggregates used in wipes produced by water needling (page 150, paragraph 5), e.g. hydroentangling, of a fiber web are guaranteed lint free (page 151, paragraph 3).

Cotton and Horrocks are analogous because both they both disclose wipes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Horrocks entangled fiber aggregate formed by water needling of a fiber web as the fiber web of Cotton in order to have an entangled fiber aggregate in Cotton's bulky sheet.

One of ordinary skill in the art would have been motivated to entangle a fiber aggregate by water needling of a fiber web because it is guaranteed to be lint free (*Horrocks* page 151, paragraph 3).

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It is desirable to have a lint free wipe in order to not leave lint on the surface being wiped.

10. Claims 2, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotton and Horrocks as applied above, and further in view of Shizuno et al. (U.S. Patent No. 5,525,397).

Cotton and Horrocks are relied upon as described above.

Cotton and Horrocks fail to disclose that the bulky sheet has an elongation of 5% or less in the machine direction thereof measured under the condition of 5N/30mm (**claim 4**), that the bulky sheet has a breaking strength of at least 5 N at the width of the specimen of 30 mm (**claim 10**), that the fiber aggregate is further entangled with and/or thermally bonded to a network sheet, or wherein the bulky sheet has not been subjected to heat shrinking or said network (**claim 2**), or said network sheet has a heat shrinkage of 3% or less as measured under 140 °C for 3 minutes (**claim 9**).

Shizuno discloses a nonwoven cleaning sheet, i.e. wipe, for the purpose of collecting various kinds of dust (*col. 1, lines 11-14*).

Regarding Applicant's claims 4 and 10, Shizuno discloses that the cleaning sheet has an elongation of 5% or less in the machine direction thereof measured under the condition of 5N/30mm, since the reference teaches that the elongation at a load of 500g/30mm, which is equivalent to 5N/30mm, is 7% or less (*col. 4, lines 37-38*). Shizuno also discloses that the cleaning sheet has a breaking strength of at least 5 N at the width of the specimen of 30 mm, since the reference discloses that the breaking strength of the cleaning sheet is 500g/30mm, which is equivalent to 5N at a width of 30 mm, or more (*col. 4, lines 34-35*).

Shizuno further discloses that if the breaking strength of the cleaning sheet is lower than 5N/30mm, the cleaning sheet will tend to break during the cleaning operation. The elongation of the cleaning sheet is as low as possible. If the elongation of the cleaning sheet is too high distortion or twisting of the cleaning sheet will occur during the cleaning operation, and therefore the cleaning sheet will become inconvenient to handle. These problems will be aggravated when the cleaning sheet is attached to a cleaning tool such as a mop handle, and used for the cleaning operation (*col. 4, lines 40-51*).

Cotton, Horrocks and Shizuno are analogous because they all disclose wipes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have a bulky sheet of the invention of Cotton and Horrocks have an elongation of 5% or less in the machine direction thereof measured under the condition of 5N/30mm and a breaking strength of at least 5 N at the width of the specimen of 30 mm as taught by Shizuno in order to provide better handling of bulky sheet.

One of ordinary skill in the art would have been motivated to have the recited breaking strength and elongation because it would prevent the sheet from breaking, distorting or twisting during the cleaning operation (*col. 4, lines 40-51*).

Regarding Applicant's claim 2 and 9, Shizuno discloses an entangled fiber aggregate and a network, wherein the fiber aggregate is entangled with the network sheet (*col. 3, lines 27-31*). Shizuno discloses that the sheet has not been subject to heat shrinking of the network sheet, or the network sheet has a heat shrinkage of 3% or less as measured under 140 °C for 3 minutes, since the reference merely discloses entangling the fiber aggregate around the network and never

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discloses that the network sheet under goes a heat treatment (*col. 3, lines 27-31 and col. 5, lines 31-44*).

Shizuno further discloses the network sheet may be made from any materials having certain perforations and having the function as a support with which the fibers of the fiber aggregate can be further entangled, forming a unitary body (*col. 3, lines 27-31*), thereby keeping the elongation low (*col. 4, lines 64-67*).

It would have been obvious to one of ordinary skill in the art at the time of the invention to entangle the fiber aggregate of the invention of Cotton and Horrocks with a network sheet as taught by Shizuno in order to form a unitary body.

One of ordinary skill in the art would have been motivated to add a network sheet to the invention of Cotton and Horrocks because the network sheet would function as a support for the fibers and keep the elongation of the sheet low (*col. 3, lines 27-31 and col. 4, lines 64-67*).

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cotton and Horrocks as applied above, and further in view of Takeuchi et al. (U.S. Patent No. 5,958,555).

Cotton and Horrocks are relied upon as described above.

Cotton further discloses that the bulky sheet has a basis weight of 30 to 100 grams per square meter, since the reference discloses a basis weight is 0.5 to 5 ounces per square yard (*col. 4, lines 28-30*), which is equivalent to 16 to 168 grams per square meter.

Cotton and Horrocks fail to disclose the bulky sheet having an apparent thickness of 1 to 5 mm, and an apparent volume of 23 to 100 cubed centimeters per gram.

Takeuchi discloses a nonwoven (*col. 3, line 65*) disposable wiper sheet (*title*). The sheet has an apparent thickness of 2.43 mm, which meets Applicant's claimed range of "1 to 5 mm,"

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so that the sheet is wholly bulky (*col. 13, lines 45-47*). The sheet has a particularly high volume, i.e. bulkiness, so that the disposable wiper sheet can get so handy and can acquire an improved effect of wiping off stains (*col. 1, lines 9-12 and col. 5, lines 37-42*).

Cotton, Horrocks and Takeuchi are analogous because they all disclose wipes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an apparent thickness of 2.43 mm as disclosed by Takeuchi in the invention of Cotton and Horrocks in order to increase the bulkiness of the Cotton and Horrocks' sheet.

One of ordinary skill in the art would have been motivated to use an apparent thickness of 2.43 mm because it would make Cotton and Horrocks' wipe handy and improve the effect of wiping off stains (*col. 1, lines 9-12 and col. 5, lines 37-42*).

Applicant discloses in the specification on page 8, lines 1-3 that the apparent volume is defined as the quotient obtained by dividing the apparent thickness by the basis weight of the fiber aggregate. Therefore, the apparent volume of the invention of Cotton, Horrocks' and Takeuchi is 14 to 152 cubed centimeters per gram, which meets Applicant's claimed range of "23 to 100 cubed centimeters per gram."

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cotton and Horrocks as applied above, and further in view of Yamazaki et al. (U.S. Patent No. 5,980,924).

Cotton and Horrocks are relied upon as described above.

Cotton further discloses that the bulky sheet has a basis weight of 30 to 100 grams per square meter, since the reference discloses a basis weight is 0.5 to 5 ounces per square yard (*col. 4, lines 28-30*), which is equivalent to 16 to 168 grams per square meter.

Cotton and Horrocks fail to disclose that the fiber aggregate contains fibers having a fineness of 5 dtex or less at an amount of 50% by weight or more.

Yamazaki discloses a skin cleansing sheet, i.e. wipe, which has a low irritativeness to the skin, excellent handling property and good stability (*col. 1, lines 6-9*). The sheet comprises a nonwoven fabric (*col. 4, line 55*) containing fibers having a fineness of 5 dtex or less at an amount of 50% by weight or more, since the reference discloses the average fineness of the fibers in the whole sheet, i.e. 100% by weight, is 1.5-3 d (*col. 5, lines 41-42*), which is equivalent to 1.65-3.3 dtex.

Cotton, Horrocks and Yamazaki are analogous because they all disclose wipes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Yamazaki's fiber aggregate containing fibers having a fineness of 5 dtex or less at an amount of 50% by weight or more in the invention of Cotton and Horrocks in order to improve the feel of the sheet.

One of ordinary skill in the art would have been motivated to use fibers with a fineness of less than 5 dtex because they have a low irritativeness to the skin, excellent handling property and good stability (*col. 1, lines 6-9*).

ANSWERS TO APPLICANT'S ARGUMENTS

13. Applicant's arguments in the response filed December 9, 2003 regarding the 35 USC 102 and 103 rejections of record have been considered but are moot since the rejections have been withdrawn.


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Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Alicia Chevalier

4/16/04